AOPs PhD School

PhD Candidate Profile

Name:
Nicolò Ghibaudo

Research Group (if relevant):
Nanostructures for Energy and Environment

Research Centre (if relevant):
N/A

Department/School(s) (if relevant):
Department of Chemistry and Industrial Chemistry

College:
University of Genoa, Genoa

Supervisor(s):
Prof. Maurizio Ferretti

Funding body:
Italian Ministry of University and Research - PhDs on Green topics

Area (field) of study:
Removal of emerging pollutants from water resources

Thesis Title:
Development of non-conventional and innovative photocatalytic technologies for the degradation of emerging pollutants and a green management of water resources

Abstract:
From an environmental and economical point of view, the identification and optimization of new procedures for an effective degradation of emerging contaminants and their by-products will provide useful information for a better management of water resources.
The current project will focus on the development of a new technology for the treatment of water polluted by emerging contaminants. The aim of this project is the scale-up a pilot plant for evaluating and assessing the optimal working parameters. In addition, obtaining a technology for the treatment of specific emerging pollutants (i.e. antibiotics and drugs) will be among the main aims of the project; indeed, the possibility to remove and degrade these kinds of contaminants will offer the opportunity to make cleaner drinking water in increasing quantities available.
Titanium dioxide "TiO_2" nanoparticles, supported on persistent luminescence materials "PeLM" (which allow the extension of TiO_2 photocatalytic efficiency in turbid waters or in absence of light) and on magnetic materials derived from industrial wastes "MaM" (which allows the easy recovery and reuse of TiO_2, thus reducing the costs) represent the employed materials.

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Collaborations:

IREN S.p.A. - A multi-utility active in the production of electrical and thermal energy, in the collection and treatment of waste, in the sale of commodities, in particular in the application of technological cores aimed at optimizing the management of the integrated water service.

Publications:

N/A

Presentations:

N/A